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(71)Applicant : MITSUBISHI HEAVY IND LTD

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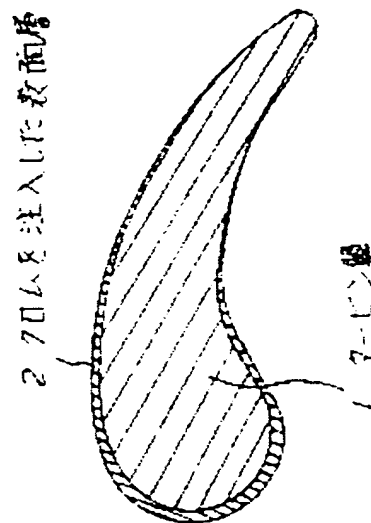
(54) TURBINE VANE

(57)Abstract:

PURPOSE: To prolong the life of a turbine vane by implanting ions of a specified element into the surface of a fiber reinforced metal such as Al or Ti alloy reinforced with whiskers so as to improve the erosion and corrosion resistances of the resulting turbine vane.

CONSTITUTION: Ions of 1W3 kinds of elements selected among Cr, Ti, Mo, W, Ni, Si, C, N, O, B, Ba, Ca, Y, Al, Zr and Sr are successively implanted into the surface of a metallic composite material for a turbine vane 1 at about 50W500keV acceleration voltage by about 1014W1019ions/cm². The metallic composite material is a fiber reinforced metal obtd. by reinforcing an Al or Ti alloy as a base alloy with ceramic filaments or whiskers of one or more among B, SiC, C and Al₂O₃.

Thus, a turbine vane having an erosion and corrosion resistant surface layer (e.g., a CR implanted surface layer) 2 is obtd.



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Patent Abstracts of Japan

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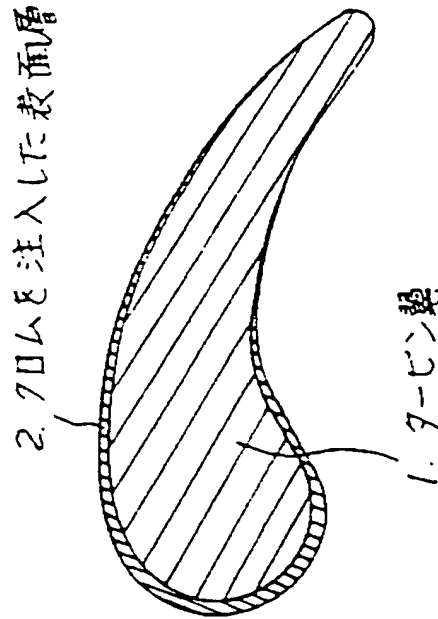
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INVENTOR : ONO SHUJI;

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TITLE : TURBINE VANE



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CONSTITUTION: Ions of 1-3 kinds of elements selected among Cr, Ti, Mo, W, Ni, Si, C, N, O, B, Ba, Ca, Y, Al, Zr and Sr are successively implanted into the surface of a metallic composite material for a turbine vane 1 at about 50-500keV acceleration voltage by about 10^{14} - 10^{19} ions/cm². The metallic composite material is a fiber reinforced metal obtd. by reinforcing an Al or Ti alloy as a base alloy with ceramic filaments or whiskers of one or more among B, SiC, C and Al₂O₃. Thus, a turbine vane having an erosion and corrosion resistant surface layer (e.g., a CR implanted surface layer) 2 is obtd.

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